CLEAN VERSION OF ALL PENDING CLAIMS

1. A two stage hydroprocessing process comprising:

a) reacting a feedstream in a first hydroprocessing stage in the presence of a hydrogen-containing treat gas, the first hydrotreating stage containing one or more reaction zones, each first stage reaction zone operated at first stage hydroprocessing conditions and in the presence of at least one first stage hydroprocessing catalyst, thereby resulting in a liquid product stream having a sulfur content less than about 3,000 wppm;

b) passing the liquid product stream of the first hydroprocessing stage to a first separation zone where a first vapor phase product stream and a first liquid phase product stream are produced;

c) reacting the first liquid phase product stream of b) in a second hydroprocessing stage in the presence of a hydrogen-containing treat gas, the second hydroprocessing stage containing one or more second stage reaction zones operated at second stage conditions wherein each second stage reaction zone contains at least one second stage hydroprocessing catalyst;

d) passing the second liquid product stream of step c) to a second separation zone wherein a second vapor phase stream and a second liquid phase stream are produced; and

e) collecting both the second vapor phase stream and the second liquid phase stream;

wherein at least one second stage hydroprocessing catalyst comprises a bulk multimetallic catalyst comprised of at least one Group VIII non-noble metal and at least two Group VIB metals and wherein the ratio of Group VIB metal to Group VIII non-noble metal is from about 10:1 to about 1:10.

CLEAN VERSION OF ALL PENDING CLAIMS (continued)

2. The process of claim 1 wherein the Group VIII non-noble metal is selected from Ni and Co and the Group VIB metals are selected from Mo and W.

3. The process of claim 1 wherein the bulk multimetallic is represented by the formula:

$$(X)_b (Mo)_c (W)_d O_z$$

wherein X is a Group VIII non-noble metal, and the molar ratio of b: (c+d) is 0.5/1 to 3/1.

4. The process of claim 3 wherein the molar ratio of b:(c+d) is 0.75/1 to 1.5/1.

5. The process of claim 3 wherein the molar ratio of c:d is preferably >0.01/1.

6. The process of claim 1 wherein the bulk multimetallic catalyst is essentially an amorphous material having a unique X-ray diffraction pattern showing crystalline peaks at d = 2.53 Angstroms and d = 1.70 Angstroms.

7. The process of claim 1 wherein the bulk multimetallic catalyst also contains an acid function.

8. The process of claim 1 wherein the feedstock is a hydrocarbon with a boiling point in the range of 25°C to 575°C, and wherein the first and second stage hydroprocessing conditions include a reaction temperature in the range of 100°C to 450°C, a pressure of 5 Bar to 1100 Bar, a space velocity of 0.5 V/V/Hr to 10 V/V/Hr, and a hydrogen gas treat rate of 100 SCF/B to 1,000 SCF/B.

9. The process of claim 1 wherein the feedstock comprises at least one of naphtha, diesel, heavy gas oil, lube oil, and residuum..

CLEAN VERSION OF ALL PENDING CLAIMS (continued)

10. The process of claim 9 wherein the feedstock is naphtha boiling in the range of 25°C to 210°C, and the second stage hydroprocessing conditions include a reaction temperature of 100°C to 370°C, a pressure of 10 Bar to 60 Bar, a space velocity of 0.5 to 10 V/V/Hr, and a hydrogen gas treat rate of 100 SCF/B to 2,000 SCF/B.

11. The process of claim 9 wherein the feedstock is diesel boiling in the range of 170°C to 350°C, and the second stage hydroprocessing conditions include a reaction temperature of 200°C to 400°C, a pressure of 15 Bar to 110 Bar, a space velocity of 0.5 V/V/Hr to 4 V/V/Hr, and a hydrogen gas treat rate of 500 SCF/B to 6,000 SCF/B.

12. The process of claim 9 wherein the feedstock is heavy gas oil boiling in the range of 325°C to 475°C, and wherein the second stage hydroprocessing conditions include a reaction temperature of 260°C to 430°C, a pressure of 15 Bar to 170 Bar, a space velocity of 0.3 V/V/Hr, and a hydrogen gas treat rate of 1,000 SCF/B to 6,000 SCF/B.

13. The process of claim 9 wherein the feedstock is a lubricating oil boiling in the range of 290°C to 550°C, and wherein the second stage hydroprocessing conditions include a reaction temperature of 200°C to 450°C, a pressure of 6 Bar and 210 Bar, a space velocity of 0.2 V/V/Hr to 5 V/V/Hr, and a hydrogen gas treat rate of 100 SCF/B to 10,000 SCF/B.

14. The process of claim 9 wherein the feedstock is a residuum having a 10% to 50% boiling range of 575°, and wherein the second stage hydroprocessing conditions include a reaction temperature of 340°C to 450°C, a pressure of 65 Bar to 1100 Bar, a space velocity of 0.1 V/V/Hr to 1 V/V/Hr, and a hydrogen gas treat rate of 2,000 SCF/B to 10,000 SCF/B.

CLEAN VERSION OF ALL PENDING CLAIMS (continued)

15. The process of claim 1 wherein the bulk multimetallic catalyst is in the form of particles having a median diameter of at least 50 nm, a surface area of at least 10 m^2/gm, a pore volume ranging from 0.05 to 5 ml/g, and an absence of pores smaller than 1 nm.

16. The process of claim 14 wherein the bulk multimetallic catalyst particle has a core-shell structure.

17. The process of claim 1 wherein at least one of the first and second stage hydro-processing catalyst further comprises a catalytically effective amount of a second catalyst.

18. The process of claim 17 wherein the second catalyst provides at least one of a desulfurization functionality, a denitrogenation functionality, an aromatics saturation functionality, a cracking functionality, and an isomerization functionality.

19. The process of claim 18 wherein for the stage(s) containing both the bulk multimetallic catalyst and the second catalyst that the second catalyst is located in at least one of:

(i) a region upstream of the bulk multimetallic catalyst;

(ii) a region containing the bulk multimetallic catalyst; and

(iii) a region downstream of the bulk multimetallic catalyst.

20. The process of claim 1 wherein the bulk multimetallic catalyst is a sulfided catalyst.

21. The process of claim 1 further comprising:

(i) operating the first hydroprocessing stage in cocurrent mode;

(ii) separating at least ammonia in the separation zone;

CLEAN VERSION OF ALL PENDING CLAIMS (continued)

(iii) operating the second hydroprocessing stage in countercurrent mode, wherein at least one second stage reaction zone contains an acid-functionalized hydrodesulfurization catalyst; and

(iv) hydroprocessing the second vapor phase stream.

22. The process of claim 21 further comprising hydroprocessing the second vapor phase stream in the second stage.

23. The process of claim 21 further comprising condensing the second vapor phase stream and hydroprocessing the condensed second vapor phase stream in the first stage.

24. The method of claim 1 wherein the second stage hydroprocessing conditions are hydrodearomatization conditions.